

# THE MOSQUITO INFECTIVITY OF *P. VIVAX* AFTER PROLONGED SOJOURN IN THE HUMAN HOST

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In the now extensive literature relating to the malaria treatment of general paralysis, the statement is not infrequently encountered that maintenance in the human host for prolonged periods, by direct inoculation of infective blood from one individual to another, modifies the malaria parasite in certain important respects.

It has been pointed out by Duke (1923) that *Trypanosoma brucei* ceases to infect *Glossina* after it has been passed through a series of about twenty vertebrate hosts; and it is now likewise claimed (Gerstmann, Barzilai-Vivaldi, Plehn, and others) that strains of *Plasmodium vivax* which have been maintained in man for prolonged periods have lost their capacity to infect anopheles.

In previous papers (Yorke and Macfie, 1924, and Yorke, 1925) reference is made to the fact that a strain of *Plasmodium vivax* maintained by direct passage in the human host since September, 1922—partly at Whittingham, and partly at Sheffield, mental hospitals—was still capable of infecting *A. maculipennis* at various passages up to the forty-first.

In March, 1926, after the strain had been maintained in the human host for three and a half years, its capacity to infect *A. maculipennis* was again examined. Forty-seven mosquitos were allowed to feed three times on a patient of the fifty-third passage, and once on a patient of the fifty-fourth passage. Fifteen days after the first feed, the mosquitos were divided into four groups, each of which was fed on a general paralytic; all four patients became infected.

with malaria. Twenty-three of the mosquitos, which lived for longer than a week after the first feed, were dissected, and of these nineteen were found to be infected—three with oocysts only, and sixteen with sporozoites in the salivary glands.

This observation shows that the strain in question had preserved unimpaired its power to infect mosquitos after fifty-three or fifty-four direct passages through man during a period of three and a half years.